Dr N. E. Hansen
Brookings, S D

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NORTH AND SOUTH DAKOTA HORTICULTURE

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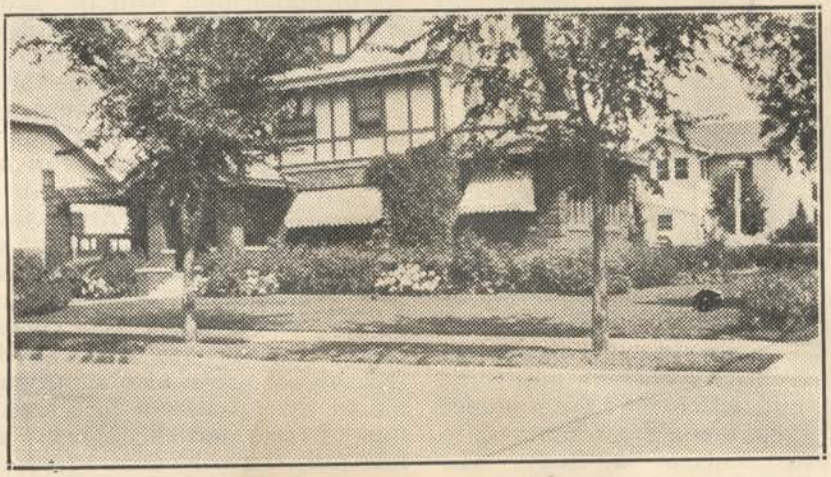

A HOME IN SIOUX FALLS

NATURE'S HAND HARD TO BEAT

John Robertson, Hot Springs, S. D.

(Written Nov. 29, 1931)

It appears as though I've not been doing my part in writing regular messages for publication in this magazine; at least I've felt some concern as to whether I've been doing my duty. This does not mean that the magazine and readers cannot get along without me, but that I cannot get along so well unless doing all I can for what I get in return; and I firmly believe that the more I do the more I get in return. Returns do not always materialize directly, but average up well in a lifetime.

The fruit crop was near a complete failure with me the past year. This is the first time in 30 years experience that I've found fruit a failure on account of late spring freezing. We have had years when late hard freezes thinned the crop some, but never before taking it entirely. While we had some little crop in all divisions excepting plums, there was so little that we did not feel very thankful. But now, after getting this far along towards what we are most sure will be a much better year, we are inclined to opinion that the loss this year will result finally in greater returns and progress than if we had had a crop. The general fruit crop over the U. S. has been good, so there is no shortage and prices are low. The human family in the animal kingdom is and has been well supplied through fruits shipped in; but the insects that eat fruits, such as coddling moth, curculio, gouger, etc., have not been so lucky and may have perished. This class in the animal family do not eat much of anything but fruit, and are so choice that each must have some particular division to live on. There were no apples or pears for the larvae of the coddling moth to enter in completing its life cycle; and no plums or cherries, either tame or or wild, for the curculio and gouger. Yes, I am thankful too that I am not like the worm by way of having to live entirely on fruit and some certain kind at that, but that I can have a choice in many divisions, even including tomatoes, to satisfy the acid requirements of my body. The tomato belongs in the vegetable class, but we find good authorities placing it with the fruits. We will not argue this point. The tomato is a most complete substitute for any and all fruits, so is good enough to associate in any class. When on this line I will say that we had a very good crop in most kinds of tomatoes. Some years ago we began getting seeds of new varieties from Prof. Yeager of the North Dakota Experiment Station, at Fargo, finding each one so superior to others we had grown that as the years have passed we are not growing any other varieties now. This past year we had Jumbo, Fargo, Red River, Progress, and Bison planted; the latter two being new sorts for the first time with us. In late years we have been inclined to favor Jumbo as being the leader in heavy production, large size, firmness and good quality either for shipping or home use; but it slipped a notch down in our estimation this year. However, there was much complaint last summer about tomatoes failing to set fruit; the extremely hot weather appearing to blight the blossoms, so that with some of the old favorites there was not much crop set on till late in season after the worst of heat had passed. We did not find any fault with the other varieties, as to setting and amount produced. The Progress and Bison are of the earliest, and each had first ripe fruits about same time. The Bison is a distinct type, making its vine growth quickly and setting a cluster of blossoms at the tip end of each branch, growing no farther. It bears heavily of medium sized fruits, but did not nearly compete in quantity with the Red River, which we decided was our best sort this year. As there are no two years alike, we are likely to find the Jumbo back in the lead again next year, or it may be some other sort than the Red River. But we have had the Red River for several years now, and have always found it one to take notice of.

In connection with the growing of tomatoes last summer we had an extra lot of trouble with the horned tomato worm. This is the same worm that is known as the tobacco worm, where tobacco is grown; because its first choice is tobacco. In this respect the horned worm resembles a goodly per cent of men in the human family in the matter of preference.

At the time of writing this, winter has set in with a heavy covering of snow. There has been a great shortage in rainfall this past summer and fall, leaving the ground go into winter comparatively dry. This snow covering will be a great help by way of preventing deep and hard freezing of roots, also supplying moisture in the air so there will not be so much drying of the tops of trees and shrubbery. We had a late and fine fall; the cold coming on gradually, without extremely hard freezes before wood had ripened and hardened, so things look very promising for a good crop next year. Then too, we have Nature's law of averages in our favor. We have put up with some poor years now, so are due for something better. There are a wonderful lot of things that man has not yet found a way of regulating or controlling, so Nature keeps on in the same old dependable way with her law of averages that may never be improved upon. There are about the same number in each of male and female born in a given number of years; opposite extremes in everything, and averaging all up, the balance is about right.

THE FLOWER SHOW

Purley L. Keene

One of the most important activities of Garden Clubs is the staging of flower shows. Whether the show is large or small, whether it includes all flowers that are in bloom at the time the show is held, or whether it is confined to only one flower, the staging of the show is one of the best methods of arousing interest in the Garden Club's program.

Many clubs concentrate on one show during the summer. This show may be a June flower show at such time as to accomodate the peony and other spring blooming perennial flowers or it may be a fall flower show planned to accommodate the fall blooming flowers, especially the gladiolus. A few clubs may hold a show both in June and in the fall. Other clubs may hold more numerous flower shows giving particular attention to certain kinds of flowers as they come into bloom, for instance, rose, sweet pea, tulip, iris, peony, or gladiolus shows. For the small club the general show, including all garden flowers in bloom at the time the show is held, probably will be the most satisfactory. Whether the show is held in June or August depends upon the wishes of the individual members of the club and the community interest.

The first flower shows which are staged should be rather simple in order to make the work as light as possible. As the interest and enthusiasm increases the show may be expanded and developed. The show should develop an appreciation for well grown flowers. It should stimulate an interest in growing more varieties of each kind rather than mixtures. It should emphasize the ability to use and to arrange flowers properly and artistically in various containers. With these points in mind we should have a number of classes devoted to artistic arrangement of flowers in various containers regardless of the kind of flowers used. We should also have classes devoted to particular flowers, giving value for the name of the variety. We should have classes giving special emphasis to well developed and well grown specimens of the more important garden flowers.

As interest and enthusiasm grows special features may be added to the flower show. These special features include shadow boxes, miniature and model gardens. In some cases a special division may be made for children's entries. In many cases commercial concerns will be glad to make an exhibit at the flower show. These exhibits are usually very instructive and educational, making very desirable additions to the show. Garden accessories such as sun dials, bird baths, lawn tables and chairs may be displayed at the show. Literature, garden books and magazines may be displayed in an information booth, garden tools, spraying materials and equipment may be given place at the show, in fact there is almost no end to the various features which may be included.

An information desk or booth should be a part of every show where exhibitors may secure information pertaining to the show and information about the culture or propagation of any particular flower which may be giving them trouble, where they can secure information about different kinds of flowers or have flowers identified or to learn the proper and accepted name. Nursery and seed catalogues are prone to use common names which frequently vary in different sections of the country. The best authorities for botanical and common names of horticulture plants is Bailey's "Cyclopedia of Horticulture" and "Standardized Plant Names."

The flower show should be made of such general interest that a large percentage of the community will be drawn to it. It should have an educational value. Many people will attend the show to learn the best and latest varieties of their particular hobby, whether it be gladiolus, dahlia, asters, peony, or what not. Some will come out of curiosity to see if any body has better flowers than they have. The majority, however, will come to learn and to help by giving constructive and beneficial criticism.

The cost of these flower shows need not be excessive. A flower show in a small community may be made to cost relatively little. A hall or bank lobby where the show may be staged without any rental charge may usually be obtained. Tables may be secured from churches or other organizations. Exhibitors may be asked to furnish their own containers until the club is able to buy a supply. Many clubs feel that they must offer premiums or prize money. This is not at all necessary. There are many clubs holding successful shows which offer only ribbons to the prize winners. If it is deemed desirable to offer prizes they may be in the nature of seeds, plants, bulbs, etc., donated by club members. Business men of the community may be solicited for premiums. This is not a practice which should be carried out year after year, but you will undoubtedly find the business men of your community very willing to help start the staging of flower shows by cooperating to the extent of offering premiums. Vases, bowls, plant containers, garden tools, spray materials and equipment are

very desirable types of premiums. These premiums should not be expensive except perhaps in one or two sweepstake classes.

With economic conditions as they are this year the club might better devote a larger amount of its time toward vegetable and fruit gardening rather than flower gardening. The club might hold a boys and girls vegetable garden contest and to go along with this contest it might stage a vegetable show in the fall of the year in which fresh and canned garden products, both vegetables and fruits, could be included. It is quite appropriate for the club to combine flower, vegetable and fruit displays into one show. I think this would be very appropriate this year. Probably it will be quite desirable to limit the cost of contests and shows which any club endeavors to stage this year. With this in mind committees should so plan their contests, shows and premiums so that little expenditure of money is required. Very successful contests and shows may be staged at compartively little expense. Where a club has been holding successful shows and contests in the past which have proven to be rather a financial burden on the club, it probably would be better to continue the shows this year but to omit all cash premiums, giving ribbons in their place. There may be a slight tendency on the part of some members to think that this will cheapen the show and lessen its importance and drawing power. However, any real garden fan will show his products whether premiums are offered or not. It seems to me that it would be much better for the club to continue its shows and contests on this basis than it would be for them to omit the show this year.

The first definite step to take in holding a flower show is the appointment of the flower show committee and its sub-committees. All arrangements pertaining to the show should preferable be left in the hands of this committee. A congenial group of workers should be selected. The work of staging the show may be divided to suit the local needs. Many clubs have sub-committees on such phases as arrangements, publicity, entries, special features, premiums, etc. The number and grouping of these committees will depend upon the local needs.

In arranging the schedule of classes considerable care should be given to see that each class is adequately described. It should state specifically the kind of flower and number of individual blooms. If it is a collection it should state specifically the character and number of spikes in the collection. In the artistic arrangement of classes a statement should be made as to whether or not foliage other than that of the flower specified may be used. The committee in charge of making the entries at the time of the show should see that all entries are made by number. The name of the exhibitor should not be disclosed to the judges until after the entries have been judged. It is well to set aside a definite space for each class. Entries of artistic arrangements should not be moved after the exhibitor leaves them since the moving is likely to make a change in the arrangement of the flowers. For convenience of judging all entries in a single class should be grouped together. If it seems desirable to rearrange the show to a certain extent after the judging has been completed, this is permissible.

At Morden, Manitoba, preliminary experiments have indicated that the yellowing of leaves of plants, which we often attribute to alkali or the lack of some rare element, may be due to a deficiency of nitrogen and potash. These two elements supplied to plants under controlled conditions prevented the plants from becoming yellow, whereas without them all the plants became affected.

In many places rocks for a rock garden may be gathered with less work before the vegetation has obscured them.

NORTH AND SOUTH DAKOTA

HORTICULTURE

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NORTH DAKOTA HORTICULTURAL SOCIETY NEWS LETTER
for MAY, 1932

A. F. Yeager
Secretary

If you are growing vegetable plants in paper bands or paper pots you are likely to find that the plants will turn yellow before time to set them out. This is due to bacterial action on the paper, in the decomposition of which nitrogen is withdrawn from the soil. To keep the plants dark green and growing, water them with a solution of nitrate of soda mixed at the rate of one ounce per gallon of water. This fertilizer application may be needed every week or so.

Now is the time to start that new asparagus bed. In doing so, it will pay to use the best plants possible, which means the Washington variety (Mary Washington strain, if possible). The best plants are good strong one-year-old plants. They should be set in the bottom of a trench eight inches to a foot deep and covered with an inch of soil. As growth proceeds, the dirt is filled in, until by fall the ground is level. Be sure there is no quack grass where the asparagus is planted.

Some of the damage marked up against rabbits in the way of girdling young trees, should be credited to the mice. Mouse girdling occurs at the ground or very close to it. There is little to be done with such girdled trees except to prevent evaporation from the barked places and let nature take its course. Sometimes they recover. To prevent drying out, paint the wounds with paraffin and mound moist earth over the barked places.

Have any of our members tried electric hotbeds? Where electricity is cheap, their use seems practical.

A recent letter asks about the possibility of growing several acres of Caraway seed. No doubt it could be done, but the marketing of a large quantity would be a difficult proposition. Here is another case where one cannot judge from the price paid for half an ounce for kitchen use, what the grower may have been able to realize.

The reason Iris is usually planted in midsummer instead of the spring is because the plants will be just as strong in the fall from midsummer planting as from spring planting and one will have been able to get blossoms before transplanting them.

There are now on the market some very attractive labels for George Washington memorial trees. Some of them look like they would wear a long while and can be obtained for about 10c each in quantity.

Some have found that the sulphonated oil recommend to protect trees from rabbits did not work. The originator claims this is probably because the linseed oil was not heated enough. It must be heated to 470 degrees, which is the place where the oil will produce quantities of thick brown smoke.

"The Care of Trees" is the title of forestry circular No. 5 of the Illinois Department of Registration and Education, Urbana, Illinois.

In hastening the maturity of tomatoes, superphosphate has been found to be very beneficial at a considerable number of Experiment Stations throughout the United States. One of the best ways to apply this fertilizer is to work it in, in an 18 inch circle around the hill, using about a quarter of a pound of superphosphate per plant.

We still have some purple groundcherry seed which we will send out to anyone who wants it and who will pay postage. We find these purple groundcherries much more productive than the yellow variety and they make good preserves.

We also have a small amount of the new variety of potato, "Katahdin," which is being introduced by the U. S. Department of Agriculture. This will be sent out free for testing, as long as the supply lasts, to persons who raise a considerable acreage of potatoes and who would like to try it. They must of course pay transportation costs.

Blossoms should be picked off newly set strawberry plants. However, ever bearing varieties which produce blossoms after the first of July may be allowed to produce a fall crop.

Individual plant forcers put over plants in the field will greatly stimulate growth and benefit plants which need extra warmth for protection, but in using them one must be very careful not to burn the plants. This means that ventilation must be provided and the ventilators opened during the heat of the day.

Irish Cobblers, Early Ohios and Bliss Triumphs still continue to be the three most important potato varieties in this state. Each of the three has its strong points and there is some difference in the adaptability of these different varieties to different soil conditions. The most important thing is having disease-free potatoes to plant.

We are asked where we get our envelopes for sending out seeds. Plain envelopes without printing may be purchased from most any stationery store. Simply ask for coin envelopes and if they are not on the shelves they can easily be procured for you.

The U. S. Department of Agriculture is experimenting with permanent mulches of con-

crete, iron cinders, etc. In this case all the ground is covered except a small place where the plants grow. Thus far the experiment looks promising. This reminds me that a year or two ago one of our county agents called attention to the fact that he had seen plants growing alongside such mulching material and they were doing exceedingly well. Perhaps a concrete garden will be the proper thing in the future.

We have been asked about Banting sweet corn. This is an early yellow variety of about the same season as Golden Gem, but in our plots it is a much lighter yielder and the table quality is not as good.

We have an inquiry about the White Gold potato. This is a new variety developed by Mr. Kramer, a farmer of Minnesota. It has done exceedingly well in some cases, but on our plots it has not been outstanding. However, it is one of the few new varieties worth trying out if one cares to test something new in the potato line.

In "Successful Farming" for February, the following are suggested as good companion plants for peonies: Hardy Phlox, annual Larkspurs, Asters, Columbine, Balloon Flower, and Gladiolus.

W. A. Toole, in "Wisconsin Horticulture," recommends as plants for the small rock garden, Arabis alpina, Alyssum saxatile, Artemesia frigida, Dianthus deltoides, Dianthus caesius, Gypsophila regens, Nepeta mussini, and Tunica saxifraga, all of which may be started from seed. Plants which should be started from divisions for rock gardens are Phlox, Sublata festuca glauca, Sedum kamschaticum, and Sedum ewesri.

The Rhode Island Experiment Station reports that potatoes are more mealy when fertilized with potash. Muriate of potash was more effective in producing mealy potatoes than sulphate. They also state that the percentage of starch does not affect mealiness. This last conclusion is different from that found in a good many other places.

A friend in Oregon who admired our wild Tiger lilies asks where to get them and how to grow them. We were obliged to state that they are considered almost impossible to domesticate. If any of our members have been successful in growing them we would appreciate hearing from them.

How far apart should different varieties of corn be planted to prevent cross-pollenation? That depends on many things. If they do not blossom at the same time they might be grown side by side and still not mix. If they do bloom at the same time and there is no heavy wind blowing from one field to the other, a few hundred feet migh prevent mixing. On the other hand, if the wind was strong at blossoming time there might be some mixing with the fields half a mile apart. Sweet corn kernels pollenated by popcorn or flint corn may easily be recognized. When one is saving seed these smooth kernels may be discarded.

In the "Potato Journal" for August, 1931, Thompson and Wessels report the results of four-year tests with different cultivation methods on potatoes. The four-year average gives a yield of 70 bushels where weeds were allowed to grow; 197 bushels where the ground was cultivated in the usual manner; 200 bushels where it was cultivated half the season; 211 bushels where the ground was not stirred but the weeds merely scraped off the surface. In every one of the four years the ground that was scraped produced the largest yield, which would seem to indicate that we should cultivate shallow and only as much as necessary to keep down weeds.

The New York Experiment Station has concluded that the quality of peas for canning is little affected by fertilizer and cultural methods. They emphasize harvesting at the proper stage as the more important thing.

Those of you who like eggplant might be interested to know that the Canadian Experimental Farm at Ottawa has been doing breeding work in developing large-fruited, early varieties.

The Washington Agricultural Experiment Station reports that at least ten good leaves are necessary to develop a good sized apple; twenty to thirty leaves are necessary for each apple of commercial size; and a larger leaf area will produce still larger fruit. This merely emphasizes the necessity for maintaining vigorous plant growth so that there are many well developed leaves. It also indicates a necessity for thinning the fruit when the trees set too heavy a crop.

The U. S. Department of Agriculture says that in wet or marshy fields the way to prevent damage from drouth is to drain the ground so that the plants may root deeper. In that way there is a greater volume of soil from which to draw moisture when a dry spell comes and the water table falls.

Circular No. 138, of Pennsylvania State College, State College, Pa., is entitled "Fertilizing Vegetable Crops." While fertilizers which will pay vary with the kind of soil and the climate, this bulletin is useful in that it gives a starting point from which to work in trying out fertilizers on your own place.

The Black Hills or Ponderosa Pine shows that it is more drouth resistant than the spruces and faster growing.

Many of our native plants are as beautiful and useful as the rare ones.

The gain from spraying the fruit trees is always satisfactory.

EXTRACTS FROM THE DIARY OF A TRAVELING MAN

W. A. Simmons

March 16th: The remains of an old resident of the west river country now stands before the entrance to the good hotel at Mission, South Dakota. This is the lower twelve feet of a giant cottonwood tree, seven feet in diameter, that formerly occupied a space in a well-watered creek bottom fourteen miles west of Mission. Although scarred by age and partially hollowed out at the base, the tree was very much alive when cut and furnished thirty-two large loads of fuel. Though larger trees of the same variety still stand along the Missouri River bottom land, this was the largest I have heard of in this western section.

"Trees offer the comfort of their shade; give beauty in the landscape; provide shelter from the winter's storm; modify the climatic extremes, and we need all of these in South Dakota." With this beautiful tribute, Governor Green begin his Arbor Day proclamation. None but a tree lover could have penned it, and a visit to his farm shows that many Arbor Days have been celebrated there.

Another tree lover puts it this way: "If the little board fashioned from nature's own trees could speak, it would say, 'I am the wooden cradle in which babes have always been rocked; I am the high chair at the table, the boards from which the table is formed. I am the bed on which you lie, the timber that built your boat, the handle of your hoe, the beam of your plow, and the door of your family home. I am the beam that holds your house, the shingle that shields your children from the elements, and the body of the trolley car that conveys you to and from your business. And, finally, I am the Church in which the last rites will be pronounced over your insensate form, and the shell of the coffin that will be your last resting place on your way to eternity.'"

March 18th: One of the most pleasing things that have been done by our state officials this year was the inauguration of the contest for beautifying the rural school grounds by State Superintendent Giffen. To every thoughtful horticulturist the bare, neglected appearance of these grounds has been a source of profound shame and sorrow, but no one has heretofore evolved a plan to improve things. This contest, however, seems to offer hope of improvement. Probably the main obstacle to the improvement of rural school grounds lies in the fact that most of such schools are closed and deserted during most of the growing season. But few of such grounds are fenced, so stray stock roams at will over the premises. As school time approaches, some neighboring farmer appears with a mower and lays low the weeds that have almost hidden the buildings during the summer. Then some nice young girl appears to open the school, usually coming from a city and often fresh from normal school and serving here her first charge. Naturally she is not enthusiastic about the country, but it is usually necessary for teachers to serve there before being able to get a school amid more modern living conditions in the city. Probably she neither knows nor cares much about horticulture, but in any case the transitory tenure of the school would make any one rather indifferent to the improved appearance of the school grounds.

Perhaps Mr. Giffen has evolved a plan that will work, but some provision must be made for the care of the trees after planting. Here is another plan that might work. Provide a tree for each girl and boy in the school. Have each one, regardless of how tiny, plant his own tree and feel an interest in and a responsibility for the growth and general welfare of that particular tree, even to visiting it at frequent intervals during the summer to remove the weeds near it. This plan should, in time, produce quite an impressive forest around each school and keep the school board hustling to provide more land, but we have no fear of an overproduction of trees in our state. The last plan is based on the school teacher being a transient and the scholars being near permanent residents of the school district and of the necessity of enlisting the interest of the latter, if the trees are to prosper.

Easter Day: I was fortunate in being able to be home for this joyful Christian holiday and the weather bureau man did his part by providing one of his most perfect offerings. The potted hyacinths seemed to realize the significance of the day and appeared determined to all blossom at once. A most appreciated present awaited me from our good friend, Father Stecher, in the shape of a rat-tailed cactus. I had often admired this rare plant in the Father's study and had asked him to some time start me a pup from it. But I was overwhelmed when I found that he had cut away a good part of his plant and sent me a full-grown dog.

Robins were all over the place, examining their last year's habitations and trying to decide whether true economy lay in repairing last year's nests or whether, in view of the present low price of building material and labor, it would be better to build entirely new ones.

The gophers seem to have set their alarm clocks for Easter before retiring to sleep off the cold months, for they were out frisking around and appearing optimistic of a good year.

April 9th: The Government Great Plains Experiment Station occupied two sections of land just south and west of the city of Mandan, North Dakota, sections that citizens were quite content

to allow the government to keep. To reach it one winds up a regular mountain road with switchbacks and hairpin turns. Probably in the whole of continental United States, below the snow line, no more unpromising natural conditions could have been picked for growing anything but rattlesnakes; just bare, wind-swept hills and a very severe climate. In one way it was an ideal location, for if it could be demonstrated that trees could be grown there, no alibi could be accepted from residents anywhere else. Men of outstanding ability were required to do anything worth while in such a location, and such the government has been fortunate enough to secure, their number including Max Pfeander and Robert Wilson, of the past, and Mr. Baird and Mr. George, of the present. The two latter received me very cordially and took me out for a long drive through the grounds, as their extent would make a walking trip impracticable.

About every known hardy variety of tree is grown here in quantity. A beautiful block of Black Hills and Blue Spruce extends for three-fourths of a mile and in five rows and contains close to five thousand trees. These are about twenty feet in height and most decided all-weather, all-year beauties. These are by no means the only conifers on the place, as many others are used in the very effective landscaping effects in various places around the extensive grounds. The deciduous trees were of course at a disadvantage in a beauty show at this time, as lack of dress, such an advantage in a bathing beauty contest, is quite a handicap in one stated for trees. However, the caraganas were taking on a pleasing emerald shade, and a long row of June Berries had a purple note to add to the scene.

One rather unlooked for sight was a large group of Arbor Vitae, very much alive and apparently enjoying life there. Thousands of fruit trees are in bearing and a block of Hibernal apple trees is being topworked to varieties of more quality but of weaker constitution.

Most of Dr. Hansen's plums are grown successfully here, and while a visit to this station at any time is a great pleasure, my advice would be to happen in there when the plums are ripe, as I did several years ago.

Seeing what has been done here reminds of the beauty that will greet visitors in coming years to the Peace Garden, in a comparable area having much more productive soil, a greater annual rainfall, and a more favorable climate. I am very glad that the North Dakota Society has voted in favor of holding its meeting near the site of the Peace Garden, as no Dakota horticulturist should miss being present at its dedication.

FIVE IMPORTANT PERENNIALS

Mrs. Jack Easton, Fargo, N. D.

I am going to tell you my idea of the five best perennials and a few facts about them. Eight years ago I knew very little about flowers beyond sweet peas, hollyhocks, and violets, but an English, flower-loving husband and the Garden Society have made great changes in my flower knowledge.

My choice, if I could have only five varities in my garden, would be Iris, Peonies, Delphiniums, Phlox, and Michaelmas Daisies. If you are acquainted with the varieties, you will note that I will have continual bloom in my border or garden.

The tall, bearded varieties of Iris, often referred to as the Poor Man's Orchid, are the most popular and most generally known. Did you notice that a real Iris lover dislikes to have Iris called flags, as only a short time ago they were known? With the advent of new varieties Iris is fast becoming more and more popular. Their exquisite colors and unrivalled form have attracted many flower lovers. I like them, too, because they bloom early in the spring before the bugs and grasshoppers have a chance to destroy them, as they have spoiled my Gladioli this year. With such things as these in mind, I think in a short time they will be classed as our most popular perennial. Any ordinary garden soil and most any position suits Iris, but a rather dry and sunny position is best. If your soil is deficient in lime, please remember that in cultivation the tall bearded varieties need lime. This can be introduced by cultivating a little slaked lime into the soil. In propagating, merely cut up the old clumps every three or four years. Every piece will grow even if it is allowed to be around out of ground for a few days. A point I want to stress is this: The sooner after blooming they are divided the better. I have in mind a friend who this year divided and moved hers before July first; at present you would scarcely believe that she moved them only this year. From my experience I find that Iris planted later in the season have a greater tendency to heave in winter than those planted earlier.

As to varieties, I like best Ambassador, Asia, Lent A. Williamson, Lord of June, Opera, Princess Beatrice, Prospero, Queen Caterina, Seminole, Shekinah, and Souv. Mme. de Gaudichau. For sweet scented varieties, there are Aphrodite, Caprice, Fairy, Isoline, Mme. Chabout, Pallida Dalmatica, and White Knight, which are among the more popular. For best red shades, Seminole, Opera, Mt. Penn, and Apache, a new real red. The best pink shades are Her Majesty, Queen of May, Dream, and Susan Bliss. Best blues, Jua-

nita, and Gertrude. And every garden should have some whites for peace makers, as a friend of mine says. I like White Knight, Mystic, and White Queen. Taj Mahal is becoming very popular.

Peonies have captivated the world. The old red "Piney" our grandmothers knew is fast giving way to the lovely and more delicately tinted varieties recently introduced. I believe they are the hardiest of our perennials in our northern states. They are massive without being too coarse, fragrant without being pungent, grand without being gaudy, and varied in form and color. From the time they show tiny red shoots in the spring until the flowers, in an almost endless number of colors, are massed on bushes, until the glossy green foliage takes on the autumnal tints of vivid carmine, purple, amethyst and orange, peonies are in great demand. Men particularly, I think, are peony enthusiasts.

The average height is from 2 to 4 feet and they spread about the same distance. The flowers are borne either singly or in groups of 2 or 3. There are single flowers, semi-double flowers, and double ones that are a mass of round, uneven petals. Some of the flowers grow so large I think it best to support the bushes or the rain will wash them to the ground. The leaves are smooth, dark, and glossy. Colors range from white with golden stamens in the center, through all shades of pink to darkest reds and purples. There are also some yellow varieties. If early and later blooming varieties are planted, the succession of bloom can last from 6 to 8 weeks.

Fall is the best time to divide peonies and they do not require a great deal of care after they are established. They are heavy feeders and require a deeply prepared soil. The best soil is a heavy loam, not too heavy with clay, or light with sand. The bed should be prepared very deeply with well-rotted cow manure. They should be given room for about a three-foot diameter development. One must remember that the cultivation given after blooming and again in the fall is necessary for next year's bloom.

The following are some of the better rating varieties: Whites, Le Cygne, Kelway's Glorious, Mme. Jules Dessert, Frances Willard, Avalanche, and Festiva Maxima. Primavere is a good yellow peony. For pinks I think Therese, Solange, Tourangelle, Walter Faxon, Mons. Jules Eli, Lady Alexander Duff, Martha Bullock, Rosa Bonhuer, Marie Crousse, Eugenie Verdier. For reds, Philippe Rivoire, Longfellow, Karl Rosefield, Mary Brand, Mikado, and Adolphe Rosseau.

The lovely delphinium, which is better known perhaps by its common name, larkspur, is well adapted to beds and borders. The delphinium is surely one of the oldest of old-fashioned flowers, but it is becoming more popular today than ever. For variety and beauty of blossoms, few other plants can equal improved English or hybrid kinds. Growing to a height of from 3 to 6 feet, they bear erect long, graceful spikes of flowers ranging in colors from white through all shades of blue and pastel pinks. If the stems are cut off close to the ground when flowers begin to wither, a second crop will follow and the blooming season is thus prolonged. Some persons believe this weakens the plants, but I have not found this to be true with my own flowers. As cut flowers, they are indispensable.

Delphiniums like plenty of sun. The soil should be rich, deeply prepared loam. In a heavy soil they are more apt to winter kill. Moisture will increase the size of flowers and spikes. Cultivate the plants constantly with a hoe. The taller sorts are benefited by being staked. But it is best done before they acutally need it. Some times cut worms and slugs eat the crowns of delphiniums so that it is wise to cover the crowns of plants with a light covering of ashes in the fall. Divide the plants every three or four years in order to keep them from exhausting the soil and becoming too compact for growth. Spring dividing is better than fall in this country.

Gardens both old and new need Phlox in all their brilliant colors to enliven the summer months just before fall flowers come into bloom. With the new varieties which have been introduced during the last years and the new effects in color, large size, and beauty of bloom, they have become a class of flowers unsurpassed. The flowers are borne in large heads or clusters at the tops of long, graceful leafy stems which grow from one and one-half to three feet tall. All the flowers are fragrant and colors are clear. They are lovely for cutting. The following varieties are worth growing: B. Compte, Beacon, Bridesmaid, Elizabeth Campbell, Fraulien Von Lassburg, Mrs. Jenkins, Rinjstrom, R. P. Struthers, Thor, and Milley Von Hobokin. Phlox need a great amount of moisture and should be watered regularly in dry weather. The soil should be deeply prepared to a depth of about 2 feet. It should be well drained and moderately rich. Since Phlox are gross feeders, good soil and plenty of moisture are absolutely necessary for their growth. Phlox are propagated by division of clumps. Every three years they tend to weaken in the center

I think the garden would not be complete without the fall aster or Michaelmas daisy. Americans who read British books about gardens are thrilled by the love of the British for Michaelmas Daisy. They blend from white into the pastel shades and then into deeper shades, blooming from September to late October. The daisies require very little care and attention. If given food and water they repay us; if not, they bloom beautifully to shame us for our neglect. In propagating, cut the clumps as often as you think necessary. They will multiply rapidly and

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DENIZENS OF SLIM BUTTE

Claude A. Barr, Smithwick, S. D.

(Continued from April)

The plateau had no flowers at all, either under the border of trees or in the rich meadow ground. After half a mile of it I turned across to the north wall and back.

Out toward the brink of the cliff I heard again and again a ringing bird call, surely the same I had heard in badlands elsewhere that had been such a puzzle. Not quite a call, certainly not a song, an attractive noise with a reverberating quality in it; notes that had been mixed in polyglot fashion with the same sweet, contented singing I had heard back by the Lion. No time to bother with the noisy fellow. But I drew nearer. There was no sweet, contented part in this program.

Far out on a pinnacle of sandstone an active, dark midget was singing, if you will call it that, at the top of his voice and enjoying it. Could I get closer? I approached with all possible caution. At a hundred feet or more the voice became quiet. All motionless. Less boisterously now, a few notes, tentatively, to be abondoned at my first step. With a wren-like flip he was out and downward.

Out of sight was the same as out of mind and in safety to that daring and shy denizen of the headland, for his loud ringing notes recommenced at once. A troughlike fissure in the soft sandstone would provide hiding for half the way. How close to the brink was it safe to go on this sort of footing with open void but a few feet to either side?

A bit of stealthy climbing and stretching, and there was Mr. Bird—**Mr.** Bird, surely—less than fifty feet off, in fine light, and so unwarned by the small fraction of me in sight that he continued singing. A wren, plainly, but such a voice! Yes, such a voice might as well belong to a wren as to any other of like diminutiveness. A rock wren, and why not? I knew him well at home in migration time, the same gray-brown appearance with but a tiny shy call-note. If the book could reconcile all the evidence his identity was settled.

On the way back toward the Lion Couchant following the edge of the cliff on a firm ledgy formation among pines and squawberry brush and looking in vain for a way down, my bird atventures were continued.

Once more I heard the sweet, contented singing but was at a loss to locate any one of two or more performers. If the wren's tones carried the semblance of reverberation there was ventriloquism in this. With the wren's music so clearly distinguished what I now heard was in slightly different key. Peaceful, delightful, with enough of brilliancy to take it entirely out of the commonplace, yet not showy, the strains came from everywhere and no where, until a short-eared owl came to my rescue.

Sweeping the low branches of a pine as he made for other parts he startled two white and gray birds from their coverts among the boughs. Three others were nearby. Why, of course. Would I never learn the lark sparrow?

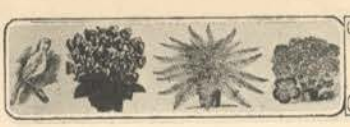
This bird which I had known only a year or two, possibly the most attractive of the sparrows, is easily distinguished once you see him, and I had heard him sing in migration. It was faintly provoking that he should choose this place for a summer residence when he had never deigned to spend more than an hour in my grove. He likes prairie if trees are in easy distance as I observed later south of the butte where there were three. Why the discrimination?

Down the slope and along the foot, making my way upward or downward, searching the cups of the mariposa for notable variations from characteristic markings, birds were for a time forgotten. Then a chickadee with friendly calling deliberately challenged my attention and it was given ungrudgingly. His presence was quite as astonishing as any of the others for at home chickadees are uncommon even in migration. It was my first chickadee of the year.

The book, Birds of South Dakota, by William H. Over and Craig S. Thoms, of our State University, aided me nicely. The unknown one and the uncertain one were easily determined as White-throated Swift and Rock Wren. Concerning the former I found this: "Common summer resident in the badlands of South Dakota. Larger than the Chimney Swift. (It had been many years since I had seen a chimney swift. They do not range in this part of the state.) Above and sides greenish black; throat, belly and flanks white. Tail slightly forked. Nests in holes in inaccessible sides of cliffs." Concerning the wren, this, in immediate application: "A common summer resident from the Missouri River westward. Nests in the rocky bluffs of river and badlands."

How little it takes to constitute an acceptable difference in environment and yet how impossibly much when it is a question of man's making. It would be simpler for Mohammed to go to the mountain!

If one would build his own sanctuary he must be content with the birds that find it agreeable to their fancy, and if a planting of trees miles out in the prairie forms when there is need a happy shelter for many prairie species and entices half a dozen to adopt it as a nesting home that would never, never be found on the prairie otherwise, it is a triumph not to be lightly compared with any vaster establishment of nature. In my small quarters some of the denizens of Slim Butte might even get to be a nuisance. Who, indeed, would want a buzzard forever nosing in on his affairs?



NORTH DAKOTA
HORTICULTURE
SOUTH DAKOTA

THE TURTLE MOUNTAINS

Dan E. Willard

The Turtle Mountains plateau is a unique remnant of an older landscape of the continent of North America. It is located in approximately the center of the continent, one half way between Lake Superior and the Rocky Mountains. It is crossed by the International boundary between the United States and Canada.

Owing to its unique location and to its geologic and geographic features, it is a most fitting place for the location of the International Peace Garden. Its beauty as a natural garden at once impresses the observer. Its fitness to be the place of an international playground, and monument of friendliness and good will, becomes more apparent the more the natural features of its geological character are studied.

The fundamental geology of this part of the North American continent is simple. The agencies or geologic processes by which the unique character of the place has been determined are somewhat complex. The understanding of the plateau, and hence the appreciation of its beauty, is easy. There is probably no accessible spot between the Atlantic and Pacific oceans that affords a more inviting and appropriate location for the International Peace Garden than does this natural beauty spot of the Turtle Mountains.

The Turtle Mountains are not mountains at all. The region is a part of the great central plain of the continent. It is a plateau about 40 by 60 miles in extent, lying in part in the United States and in part in Canada. Nature, in laying out the ground plan of the landscape of the continent, did not give heed to political boundaries. It happens that the political boundary, between the United States and Canada, crosses this unique landscape feature.

The interior of continental North America is made up of simple geologic formations deposited on sea bottoms as muds. These formations are the limestones, standstones and shales that lie below the surface.

Whenever land occurs above sea level there erosion by streams and weathering by rain, wind and weather go continually on. The interior of the continent of North America has long been above sea level, and so the work of streams in eroding and carrying away the formations, and the ceaseless activity of weathering agencies, has long been going on.

Great valleys have been formed by the erosion of streams. Remnants of the regional formations, that have not been carried away, remain as hills and plateaus. The Turtle Mountain plateau is such a remnant. The great valley of the Souris or Mouse is on the west and north. The great Assinniboine is north. The Pembina, tributary of the Red River of the North, lies to the east and north. To the south is the great plain of the Devils Lake region, sloping to the south, a part of the Sheyenne drainage system.

The formation of the plateau is simple. It is made up of rock strata or layers essentially horizontal. These strata were once continuous with the formations that occur in the great Missouri Plateau to the west. These same formations once extended far to the north, east and south. They have been carried away by erosion during the geologic ages preceding the Glacial Period.

The unique character of the landscape of the Turtle Mountain plateau today is due to the work of ice of the Glacial Period. The hills and basins that give charm to the region are the result of ice action. The hills are "dumped" hills or "dump" moraines deposited when the ice of the great continental ice sheet melted. The region is that of a typical terminal moraine.

The understanding of the region requires a little use of the imagination. The ice of the great ice sheet was hundreds of feet thick. In its slow but restless movement southward it carried vast quantities of earth material. These earth materials are what make up the hills. All the stones of all sizes from huge boulders to tiniest grains of sand and particles of clay were carried by the ice. When the ice melted all this earth material was thrown down, dumped, forming the hills. Where there is a hollow or basin less earth was dropped. Possibly a huge block of ice stood there and when it finally melted, there was nothing there but water. If the basin is siuated right—if more water gathers in the basin than evaporates—then there is a lake.

Such are the beautiful lakes and such the charming hills of this region. There are no streams because there has not been time since the Glacial Period for drainage to develop.

Yes, there are fish in the lake. Where they came from let the biologists explain. The hills are beautifully wooded and game abounds.

It is a natural Garden. Stones—boulders—of every kind found in the formations to the north for hundreds of miles occur here in rich profusion. Granites, quartzites, Porphyry, limestones, fragments of hard volcanic lavas, soft shales, in fact every variety of formation of which the earth is composed in the region extending to the west of Hudson's Bay, may be picked up here.

A rockery may some time adorn the garden or a geological museum made up of stones picked up in the immediate vicinity, that represent every geologic formation between the International Boundary and the North Pole.

It is well that this beauty spot of Nature has been chosen as an International Peage Garden. Nature made it a great monument. It is fitting that two great nations should come together

here. Here diplomats, scientists and recreation seekers may find common ground. A more charming recreation ground would be hard to find. Places of greater interest to the geologist, the nature lover, are few. The lover of fish, birds and game will revel here. The land belongs to two great nations. It is open to the world. Nature made it a monument to Peace and Good Will.

FIVE IMPORTANT PERENNIALS

(Continued from page 57)

you will always have a few plants to give to friends.

Since the height varies from one and one-half to six feet, some varieties can be used for backgrounds, while others bring a mass of color into the border. All species can be used for cutting and are useful in large vases for the home and social gatherings.

It has been a pleasure for me to tell you about my five favorite perennials. Of course, I realize that there are many others that help to beautify the garden. Then, too, there are the little tuck-ins which improve the appearance of the garden and which do not have to be used in such great quantities. Some of these are Columbine, Gaillardia, Canterbury Bells, Fox Gloves, Gypsophila, Hardy Lilies, Sweet Rocket, Oriental Poppy, Platy Codon's, and Veronicas.

I hope, if you have not already had my favorite perennials in your garden, that you will plant them next year. I am sure that you will be pleased greatly with the results.

"It's Not a Home Until It's Planted"

Throughout much of the East this period has been colder than during most of the winter, but it has been warmer in the West. Precipitation in the form of both rain and snow has been abundant to heavy in the East and the Pacific Northwest, but light elsewhere. Most of the Mountain States report ample moisture for irrigation requirements, but California will need April rains if the flow from sage plants is to come up to earlier expectations. Much brood was killed by the unseasonably cold weather during March and the necessity for feeding has increased in a large number of apiaries.